IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (currently amended): An image processing device, comprising:

a filtering unit ~~which filters~~ configured to filter an input image with variable frequency characteristics;

an edge detection unit ~~which detects magnitudes~~ configured to detect a magnitude of [[edges]] an edge appearing in the input image; [[and]]

a degree-of-white-background-likeliness detection unit ~~which detects degrees~~ configured to detect a degree of white-background likeliness in respect of a local [[areas]] area of the input image; and

an edge-magnitude-conversion unit configured to convert the detected magnitude of the edge into a filter factor responsive to the detected degree of white-background likeliness,

wherein said filtering unit changes the variable frequency characteristics in response to the ~~magnitudes of edges and to the degrees of white-background-likeliness~~ filter factor obtained by said edge-magnitude-conversion unit.

Claim 2 (original): The image processing device as claimed in claim 1, wherein said degree-of-white-background-likeliness detection unit marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.

Claim 3 (canceled)

Claim 4 (currently amended): The image processing device as claimed in claim [[3]] 1, wherein said edge-magnitude-conversion unit converts the ~~magnitudes~~ detected magnitude of [[edges]] the edge such that the variable frequency characteristics enhances high frequency components to an increased degree at edge areas as the ~~degrees~~ degree of white-background likeliness increases.

Claim 5 (currently amended): The image processing device as claimed in claim [[3]] 1, wherein said filtering unit enhances high frequency characteristics of the variable frequency characteristics at edge areas according to the ~~converted magnitudes of edges~~ filter factor, the enhancement of the high frequency characteristics being made relative to the variable frequency characteristics applied to non-edge areas.

Claim 6 (currently amended): The image processing device as claimed in claim 5, wherein said filtering unit includes:

a first filter ~~which has~~ having a frequency characteristic that is space invariant over all areas of the input image; and

a second filter ~~which has~~ having a high-frequency-enhancement characteristic, and [[has]] an output level ~~thereof~~ of the second filter being adjusted in response to the ~~converted magnitudes of edges~~ filter factor.

Claim 7 (original): The image processing device as claimed in claim 6, wherein the frequency characteristic of said first filter enhances edges while suppressing generation of moiré in mesh-dot image areas.

Claim 8 (original): The image processing device as claimed in claim 6, wherein said first filter has a band-frequency-enhancement characteristic.

Claim 9 (currently amended): A method of processing an image, comprising ~~the steps of~~:

detecting ~~magnitudes~~ a magnitude of [[edges]] an edge appearing in an input image;

detecting ~~degrees~~ a degree of white-background likeliness in respect of a local [[areas]] area of the input image; [[and]]

converting the detected magnitude of the edge into a filter factor responsive to the detected degree of white-background likeliness; and

applying filtering processes to the input image while changing frequency characteristics of the filtering processes in response to the ~~magnitudes of edges and the degrees of white background likeliness~~ filter factor.

Claim 10 (currently amended): The method as claimed in claim 9, wherein the ~~step of~~ detecting ~~degrees~~ a degree of white-background likeliness marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.

Claim 11 (currently amended): An image processing device, comprising:

a degree-of-white-background-likeliness detection unit ~~which detects~~ configured to detect a concentration of white pixels in a binary image obtained by binarizing an input multi-level image, and to detect ~~degrees~~ a degree of white-background likeliness in respect of a local [[areas]] area of [[an]] the input multi-level image in response to the detected concentration of white pixels; and

a gray-level conversion unit ~~which converts~~ configured to convert a gray ~~levels~~ level of the input multi-level image according to conversion characteristics that change in response to the ~~degrees~~ degree of white-background likeliness.

Claim 12 (currently amended): The image processing device as claimed in claim 11, wherein said gray-level conversion unit includes:

a plurality of gray-level conversion units ~~converting~~ configured to convert the gray ~~levels~~ level of the input multi-level image according to respective ~~gray-level-conversion~~ conversion characteristics; and

a selection unit ~~which selects~~ configured to select one of said plurality of gray-level conversion units in response to the ~~degrees~~ degree of white-background likeliness.

Claim 13 (original): The image processing unit as claimed in claim 11, wherein said degree-of-white-background-likeliness detection unit is an area detection unit that marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.

Claim 14 (currently amended): The image processing unit as claimed in claim 13, wherein said area detection unit includes:

a thresholding unit ~~which carries~~ configured to carry out thresholding of the input multi-level image to generate a binary image;

a white-background-area detection unit ~~which counts~~ configured to count white pixels in a given area of the binary image, and [[marks]] to mark the given area of the binary image as a white-background area or a non-white-background area in response to the count; and

an expansion unit [[which]] configured to spatially ~~expands~~ expand the white-background area by a predetermined number of pixels in all directions when the white-background area is detected by the white-background-area detection unit.

Claim 15 (original): The image processing device as claimed in claim 14, wherein the predetermined number of pixels and an image resolution (dpi) of the input multi-level image are related as:

150 < (the image resolution (dpi) / the predetermined number of pixels) < 400.

Claim 16 (original): The image processing device as claimed in claim 13, wherein a gray-level conversion characteristic applied to the white-background areas converts an input gray level of the input multi-level image into a greater value than a gray-level conversion characteristic applied to the non-white-background areas in a range of input gray levels above a predetermined gray level.

Claim 17 (original): The image processing device as claimed in claim 13, wherein a gray-level conversion characteristic applied to the white-background areas converts an input gray level of the input multi-level image into a value greater by a constant amount than a value output by a gray-level conversion characteristic applied to the non-white-background areas in a range of input gray levels above a predetermined gray level.

Claim 18 (original): The image processing device as claimed in claim 13, wherein a gray-level conversion characteristic applied to the white-background areas converts an input gray level of the input multi-level image into a maximum gray level in a range of input gray levels above a predetermined gray level.

Claim 19 (original): The image processing device as claimed in claim 11, wherein a gray-level conversion characteristic applied to the white-background areas is adjustable by user operation.

Claim 20 (original): The image processing device as claimed in claim 11, wherein the input multi-level image supplied to said degree-of-white-background-likeliness detection unit is an image obtained after a filtering process that has such a frequency characteristic as to smooth isolated dots.

Claim 21 (original): The image processing device as claimed in claim 11, wherein the input multi-level image supplied to said degree-of-white-background-likeliness detection unit is an image obtained after size-change processing.

Claim 22 (currently amended): The image processing device as claimed in claim 13, further comprising:

a block-generation unit ~~which divides~~ configured to divide an area-detected image into a plurality of blocks when the area-detected image is output from said area detection unit;

an area-pixel counting unit ~~which counts~~ configured to count pixels marked as the white-background areas within each of the blocks; and

a check unit ~~which marks~~ configured to mark each of the blocks either as a white-background block or as a non-white-background block in response to the counts obtained by said area-pixel counting unit.

Claim 23 (original): The image processing device as claimed in claim 22, wherein the blocks are square shaped.

Claim 24 (currently amended): An image processing device, comprising:

a plurality of gray-level conversion units ~~converting~~ configured to convert a gray ~~levels~~ level of an input multi-level image according to respective gray-level-conversion characteristics;

an area detection unit ~~which detects~~ configured to detect a concentration of white pixels in a binary image obtained by binarizing the input multi-level image so as to detect a degree of white-background likeliness in respect of a local area of the input multi-level image in response to the detected concentration of white pixels, and to detect a boundary [[areas]] area adjacent to a white ~~backgrounds~~ background in the input multi-level image in response to the detected degree of white-background likeliness; and

a selection unit ~~which selects~~ configured to select one of said plurality of gray-level conversion units in response to a detection ~~results~~ result of said area detection unit.

Claim 25 (currently amended): The image processing device as claimed in claim 24, wherein said area detection unit includes:

a thresholding unit ~~which carries~~ configured to carry out thresholding of the input multi-level image to generate a binary image;

a white-background-area detection unit ~~which counts~~ configured to count white pixels in a given area of the binary image, and [[marks]] to mark the given area of the binary image as a white-background area or a non-white-background area in response to the count;

an expansion unit [[which]] configured to spatially ~~expands~~ expand the white-background area detected by the white-background-area detection unit; and

an logical AND unit ~~which obtains~~ configured to obtain a logical product of the binary image and an image in which white-background areas are expanded by said expansion unit, thereby outputting a binary image indicative of the boundary areas.

Claim 26 (original): The image processing device as claimed in claim 24, wherein a gray-level conversion characteristic applied to the boundary areas converts an input gray level of the input multi-level image into a greater value than a gray-level conversion characteristic applied to areas other than the boundary areas in a range of input gray levels above a predetermined gray level.

Claim 27 (currently amended): A method of processing an image, comprising ~~the steps of~~:

detecting a concentration of white pixels in a binary image obtained by binarizing an input multi-level image;

detecting ~~degrees~~ a degree of white-background likeliness in respect of a local [[areas]] area of [[an]] the input multi-level image in response to the detected concentration of white pixels; and

converting a gray ~~levels~~ level of the input multi-level image according to gray-level conversion characteristics varying depending on the ~~degrees~~ degree of white-background likeliness.

Claim 28 (currently amended): The method as claimed in claim 27, wherein the ~~step of~~ converting a gray ~~levels~~ level of the input multi-level image includes ~~the steps of~~:

converting the gray ~~levels~~ level of the input multi-level image according to different gray-level-conversion characteristics; and

selecting one of outputs of the different gray-level conversion characteristics in response to the ~~degrees~~ degree of white-background likeliness.

Claim 29 (currently amended): The method as claimed in claim 27, wherein the ~~step of~~ detecting ~~degrees~~ a degree of white-background likeliness marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.

Claim 30 (currently amended): An image processing system, comprising:

an image input unit ~~which acquires~~ configured to acquire an image;

an edge detection unit ~~which detects magnitudes~~ configured to detect a magnitude of [[edges]] an edge appearing in the acquired image;

a degree-of-white-background-likeliness detection unit ~~which detects degrees~~ configured to detect a degree of white-background likeliness in respect of a local [[areas]] area of the acquired image;

an edge-magnitude-conversion unit configured to convert the detected magnitude of the edge into a filter factor responsive to the detected degree of white-background likeliness;

a filtering unit ~~which applies~~ configured to apply a filtering ~~processes~~ process to the acquired image while changing frequency characteristics of the filtering ~~processes~~ process in response to the ~~magnitudes of edges and the degrees of white background likeliness~~ filter factor obtained by said edge-magnitude-conversion unit; and

an image output unit ~~which reproduces the~~ configured to reproduce a filtered image.

Claim 31 (currently amended): The image processing system as claimed in claim 30, wherein said ~~degrees of white background likeliness~~ degree-of-white-background-likeliness

detection unit marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.

Claim 32 (currently amended): An image processing system, comprising:

an image input unit ~~which acquires~~ configured to acquire an image;

a degree-of-white-background-likeliness detection unit ~~which detects degrees~~ configured to detect a concentration of white pixels in a binary image obtained by binarizing the acquired image, and to detect a degree of white-background likeliness in respect of a local [[areas]] area of the acquired image in response to the detected concentration of white pixels;

a gray-level conversion unit ~~which converts~~ configured to convert a gray ~~levels~~ level of the acquired image according to gray-level conversion characteristics varying depending on the ~~degrees~~ degree of white-background likeliness; and

an image output unit ~~which reproduces the~~ configured to reproduce a gray-level converted image.

Claim 33 (currently amended): The image processing system as claimed in claim 32, wherein the gray-level conversion unit includes:

a unit ~~which converts~~ configured to convert the gray ~~levels~~ level of the input multi-level image according to different gray-level-conversion characteristics; and

a unit ~~which selects~~ configured to select one of outputs of the different gray-level conversion characteristics in response to the ~~degrees~~ degree of white-background likeliness.

Claim 34 (currently amended): The image processing system as claimed in claim 33, wherein said ~~degrees of white background likeliness~~ degree-of-white-background-likeliness

detection unit marks white backgrounds and boundary areas adjacent to the white backgrounds as white-background areas, and marks other areas as non-white-background areas.